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ABSTRACT

Conventional approaches to evaluating vocational education have often been criticized for failing to deal holistically with the institution or program being evaluated. Integrated quantitative and qualitative evaluation methods have documented benefits; therefore, it would be useful to consider possibility of developing a model for evaluating vocational institutions/programs based on the holistic approach that traditional Chinese physicians (TCPs) use in diagnosing and treating medical problems. TCPs have developed a technique for approaching their clients through four types of physical examination: inspecting their appearance, smelling their odor, taking their pulse, and questioning their symptoms. By analogy with the TCP model of physical examination, a TCP model has been proposed for evaluating a vocational education institutions' strengths/weaknesses and the degree to which its objectives are being met. The model's main steps are as follows: (1) establish a collaborating team to plan and coordinate the evaluation; (2) develop formal evaluation purpose, scope, and criteria statements; (3) develop evaluation questions for the whole institution and each of its divisions; (4) select appropriate data collection techniques (measurement, investigation, observation, interview); (5) collect and analyze data; and (6) synthesize and judge the evaluation outcomes. (MN)

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Running head: VOCATIONAL EDUCATION

A Holistic Approach to Evaluating Vocational Education: Traditional Chinese Physician (TCP) Model

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Abstract

Evaluation is not only a means of improvement but also an integral part of any vocational education institution or program. However, conventional evaluation approaches are often criticized for failing to holistically deal with the institution or program evaluated as an organism. The 3,500-year-old traditional Chinese medicine and pharmacology are among the most important heritages of the splendid history of Chinese civilization. Traditional Chinese physicians (TCP's, called "jong-i" in Chinese) developed a special way of approaching their clients through four types of physical examination: inspecting the appearance, smelling the odor, taking the pulse, and questioning the symptom. A TCP normally diagnoses and treats the whole of his/her client, not just the diseased part. Based upon the holistic principle which TCP's have employed, an evaluation model called the "TCP model" was created by the authors for evaluating vocational education. The intent of this paper is to present the TCP model and its applications. In this paper, the first section profiles the demand of holistic evaluation, the second section describes the TCP diagnosis and treatments, and the third section presents the TCP model and its main procedures for and key considerations in applications.

A Holistic Approach to Evaluating Vocational Education: Traditional Chinese Physician (TCP) Model

Both efficiency (i.e., doing things right) and effectiveness (i.e., doing the right things) of vocational education absolutely need to be continuously pursued. As recommended by Unesco (1974), "in order to ensure quality, responsible national authorities should establish certain criteria and standards, subject to periodic review and evaluation, applying in all aspects of technical and vocational education..." (Principle 15) and "evaluation services as a whole should ensure the quality and smooth operation of technical and vocational education by continuous review and action directed to constant improvement of staff, facilities and programs" (Principle 17). As an improvement means and an integral part of vocational education, evaluation is the formal determination of the quality, effectiveness, or value of a program, project, product, or process (Worthen & Sanders, 1987).

However, conventional evaluation approaches are often criticized for failing to holistically deal with the institution or program evaluated as an organism. The intent of this paper is to present the TCP (i.e., traditional Chinese physician) model, which is a holistic evaluation approach, and its applications.

Demand of Holistic Evaluation for Vocational Education

Since the 1970s, two camps of evaluation approaches, qualitative and quantitative, have engaged in a methodological

battle. The quantitative camp praises the virtues of hard, generalizable data and criticizes the qualitative methods for lacking standardization, precision, objectivity, and reliability of measurement as well as replicability and generalizability of findings. The qualitative camp extols the superiority of deep, rich observational data and criticizes the quantitative methods for being over-simplified (Schofield & Anderson, 1984; cited in Worthen & Sanders, 1987). The debate between quantitative and qualitative camps in the last two decades has come about as a result of irreconcilable methodological persuasions.

In agreement with other advocates such as Guba and Lincoln (1981), Cook and Reichardt (1979) view the debate between qualitative and quantitative camps not only as a disagreement over the relative advantages and disadvantages of qualitative and quantitative methods but also as a fundamental clash between methodological paradigms. According to Pearse (1983) and Koetting (1984), three orientations--positivist, interpretative, and critical--are often considered the methodological paradigms. In order to help others conceptualize the above three orientations or paradigms, Pearse (1983) raises a metaphor as follows. When we imagine the construction of a building or dwelling, we can consider the problem from the perspectives of the carpenter, the finisher-designer, or the architect. The carpenter sees the task as a technical one, to put the pieces together in an efficient, functional manner. The task is to build a house. The finisher-designer has greater concern for the

future inhabitants as individuals: for their needs, wants, and feelings. The interest is in the live-in space and the building seen as a home. The architect has broader concerns and sees the building as a whole--the house, the home and its larger environment. The interest is in community. Accordingly, the carpenter can be linked to the positivist orientation, the finisher-designer to the interpretive orientation, and the architect to the critical orientation. In other words, evaluation within the positivist or interpretive perspectives focuses attention on problems of efficiency and of understandings which are enclosed within a larger framework of largely unquestioned values and social institutions; and critical science can address these value questions. That is to say, the critical orientation can use interpretive as well as positivist science at the same time to produce rational knowledge; however, the main weakness of the critical paradigm is also from its large framework which covers interpretive and positivist perspectives. The critical paradigm is often charged with being too subjective, too value laden, not replicable, not generalizable, drawing trivial conclusions, having no validity, not being empirical, unscientific, etc.

The optimum evaluation method is always being pursued. According to Patton (1980), the evaluator's role can be described as "'active-reactive-adaptive' in working with decision makers and information users to focus evaluation questions and make methods decisions" (p. 18). Although "the science of making

methods decisions is no less highly developed than the technology for making other simple decisions, for example, how to choose a spouse, career, city of residence, or which toothpaste to use" (Patton, 1980, p. 17), an active-reactive-adaptive evaluator should be methodologically flexible, sophisticated, and able to use a variety of methods to study any particular evaluation question (Patton, 1980).

Worthen and Sanders (1987) view quantitative and qualitative methods as compatible, complementary approaches in evaluation of educational programs. Madey (1982) has summarized and suggested the benefits obtained by integrating quantitative and qualitative methods. Thus, it is desirable to employ both quantitative and qualitative methods in an institution/program evaluation. A holistic approach, featured as an integration of both quantitative and qualitative methods, is needed in vocational education, although a variety of evaluation models, such as CIPP (Context, Input, Process, and Product) and DEM (Discrepancy Evaluation Model), exist.

TCP's Generic Diagnosis and Treatments

Traditional Chinese physician (TCP, also called "traditional Chinese medicine--TCM") is a therapeutic system which employs numerical reasoning and a macroscopic perspective to gather and confirm data and to make inferences. Using a holistic approach, TCP's have synthesized their objective knowledge of the organism and of medical therapy into a medical model. This model is used clinically for pattern identification and treatment, prescribing,

and the application of therapeutic techniques.

The theories of "ying" and "yang" and the five phases, which are the guiding ideologies in TCP, are used mainly to elucidate the physiology and pathologies of the human body, the nature of diseases, and the general precepts for diagnosis and treatment. "Ying" and "yang" are two opposing principles in nature, the former denotes shade, femininity, negativity (-), and the quantitative, the latter represents light, masculinity, positivity (+), and the qualitative (see Figure 1). The concept of transformation and counterbalancing between the complementary opposites of ying and yang is used to explain the relationship between man and the natural world and to rationalize a whole array of medical phenomena. The term "five phases" refers to five qualities: metal, wood, water, fire, and earth (see Figure 2). The Chinese word for "five phases" implies movement, emphasizing the concept of mutual control and interdependence. For example, each of the five phases represent the characteristics of different organs and viscera. The lung (-) and the large intestine (+) are associated with the metal phase, the liver (-) and the gall bladder (+) with wood, the kidney (-) and the bladder (+) with water, the heart (-) and the small intestine (+) with fire, and the spleen (-) and the stomach (+) with earth. Certain physiological phenomena and pathological changes are understood in terms of different patterns of interaction between the five, known as cycles of production, control, humiliation and insult (see Figure 1).

Figure 1. Harmonious Ying and Yang.

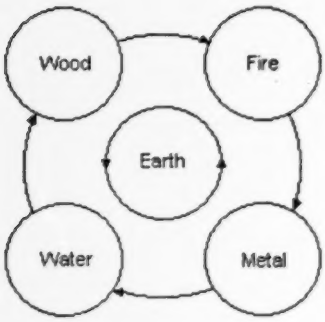

Figure 2. Five Phases.

TCP's clinical diagnosis is made using the so-called "four examinations" as well as pattern differentiation techniques. The four examinations include palpation (i.e. taking the pulse), and inquiry (i.e., questioning the symptom), and visual and smelling examinations (i.e., inspecting the appearance, and smelling the odor). Pattern identification is the process of collecting the objective signs and symptoms, and synthesizing and collating the data obtained. These two aspects of the diagnostic process are used in coordination to arrive at the correct diagnosis. Basically speaking, importance is placed on nonspecific bodily symptoms, or, in other words, the overall pattern of symptoms (referred to as the pattern of disharmony in the context of pathogenesis). Specific local symptoms (as from laboratory diagnosis) are less important. As for prescribing and applying therapeutic techniques, the physician first ascertains the pathomechanism form and the overall pattern of symptoms, then, in

accordance with long established therapeutic models, he or she selects an appropriate medicine, formulae or therapeutic technique to cure the patient.

To sum up, the philosophy and methods of diagnosis and treatment in TCP are holistic in nature. The exterior of the body and the internal organs--all body tissues--are seen as an organic whole. External factors are also considered, including climate and environmental factors. In other words, there is an emphasis on the internal balance of the adaption of the body to the external environment. As for pattern identification, analysis must be made of both local signs and symptoms and of the body as a whole. Consideration must also be given to the effect the overall condition of the organism is having on the local symptoms. In this way a single-dimension reductionist approach to understanding and treating disease is avoided as far as possible, so that both the symptoms of the disease and the disease itself can be cured.

TCP Model and Its Main Procedures and Key Considerations in Applications

The evaluation of vocational education institutions involves evaluation of the total educational program of the institution and entails the collection of data on all aspects of its functioning. The purpose of this evaluation is to determine the degree to which objectives are being met and to identify areas of strengths and weaknesses in the total program (Gay, 1985). This information provides feedback which gives direction to the future

activities of the institution and results in decisions concerning the allocation of institutional resources.

Based upon the TCP's rationale and techniques depicted earlier, a TCP evaluation model may be illustrated as Figure 3. The TCP model holistically concerns the vocational education institution or program evaluated as an organic body. Five aspects of vocational education institution (i.e., instructional, guidance, general, personnel, and accounting; or five key resources--people, affairs, time, place, and things) are considered as the five interdependent crucial organs (i.e., five phases) of the organic body. It is desired that this body should not only maintain a dynamic balance with the external environment but also sustain mutual coordination among internal organs. For example, when a vocational education institution's instructional objectives must be adjusted to meet the changes of external environment (e.g., economic conditions, technological progress), the four other affairs divisions as well as the instructional affairs division have to efficiently and effectively dedicate themselves to the objectives adjustment. That is to say, every individual division contributes to meeting institutional objectives met and the strengths and weaknesses in the institution.

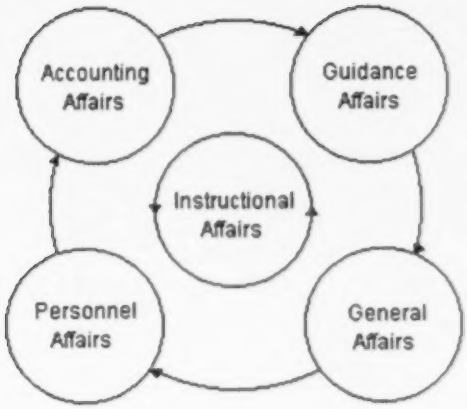

Figure 3. Illustrated TCP Evaluation Model.

To employ the TCP model to evaluate the degree to which vocational education institution objectives are being met and the strengths and weaknesses in the institution, four examinations including measurement (i.e., "palpation"), investigation (i.e., "inquiry"), and observation and interview (i.e., "visual and smelling examinations") may be appropriately applied to collect quantitative and qualitative data. In terms of the TCP model's main procedures, the following five steps are suggested: (1) Establish a collaborating team for planning and coordinating the evaluation, (2) Develop and make formal purposes, scope and criteria statement for the evaluation, (3) Develop evaluation questions for the whole institution and each of its individual divisions, (4) Select appropriate data collection techniques such as measurement, investigation, observation and interview, (5) Collect and analyze data or information from the evaluation, and

(6) Synthesize and judge the outcomes of the evaluation.

It is widely recognized that evaluation is a complex process. The TCP evaluation model presented in this paper only represents a framework for deliberating vocational education institution evaluation. When this model is applied, holistic perspectives and pluralistic techniques must be emphasized.

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